For the Wyoming Department of Education

Transition from the *Wyoming Mathematics Content Standards* to the *Common Core State Standards for Mathematics,* Grades K–8

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McREL

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HOW TO READ THIS DOCUMENT

This document compares the *Wyoming Mathematics Content Standards* from 2008 to the *Common Core State Standards for Mathematics*. The purpose of this document is to help teachers who are working with current Wyoming standards understand how the Common Core standards will differ. The document is designed to give the teacher, at a glance, a sense of what new content the student will need to master in the near future. It also provides a sense of what new content the student will be mastering in previous grades.

The Wyoming standards and their related benchmarks are listed for each grade, K–8. Beneath each standard and its benchmarks is listed topically related Common Core State Standards (CCSS) content that would be appropriate for that standard but is not currently found in the state's benchmarks at that grade. In some cases, the CCSS might actually be touched upon in the state benchmarks, but only very generally, or addressed at a later grade. In addition to the CCSS content for the current grade, CCSS content that is missing from the two previous grades, with the exception of grade 1 and kindergarten, is also listed (see the illustration on the next page). The purpose for showing multiple grade levels is to provide teachers with all the information they need to understand how student expectations are changing with the adoption of the Common Core. While teachers may focus primarily on the content for their grade, they may need at times to see the progression of skills in prior grades in order to fill in learning gaps. In some cases, the increase in rigor between the Wyoming standards and the CCSS means that students will likely need more than one year to catch up. Showing a continuum of skills will help teachers over the course of several transition years understand what content needs to be supplemented in order to prepare students for the CCSS.

It is important to note that while the findings for the previous two grades are listed below each standard, comparisons between the documents is always grade-to-grade. So, for example, if Common Core content appears at grade 2 but does not appear in the state standards until grade 4, the content is identified in this report as missing from the state standards at grade 2. It should be noted that the content in the following tables is not verbatim from the Common Core Standards document. The CCSS content shown has been paraphrased into bulleted statements in order to keep the document simple and user friendly. The statements may be a synthesis of the wording found in the Wyoming document and the Common Core Standards.

Standards and benchmarks from the Wyoming mathematics standards in Grade 2

GRADE 2

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

State benchmarks	
MA2.3.1	Students apply estimation and measurement of length to content problems using standard units to the nearest inch.
MA2.3.2	Students apply estimation and measurement of weight to content problems using non-standards units.
MA2.3.3	Students tell time, using both analog and digital clocks to the nearest five minutes.

Additional content found in the Common Core State Standards related to Measurement

CCSS grade K not found in state grade K	CCSS grade 1 not found in state grade 1	CCSS grade 2 not found in state grade 2
Measureable attributes • Describe measureable attributes of objects, such as length or weigh • Directly compare two objects w measurable attribute in commo see which object has "more of" of" the attribute, and describe t difference.	N/A	*Comparison of measureable attributes* • Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen *Relate operations to measurement* • Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units • Represent the number line using whole numbers as lengths from 0 and represent whole-number sums and differences within 100 on a number line diagram *Time* • Tell time using a.m. and p.m.

Kindergarten and grade 1 content that was found to be missing from the state standards in Kindergarten and grade 1. "NA" indicates that no content was found to be missing from the state document.

Content found in the Common Core State Standards for Mathematics in grade 2 that is not found in the state document in grade 2

Unique organizing headers developed for this document

GRADE K

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MAK.1.1	Students read and represent numbers up to 9.
MAK.1.2	Students recognize the larger of two sets. (Which set has more or less?)
MAK.1.3	Students recognize and name penny, nickel, dime, and quarter using real coins.
MAK.1.4	Students count with understanding up to 21 objects to solve problems.
MAK.1.5	Students act out or use objects as strategies to solve problems.

Additional content found in the Common Core State Standards related to Number Operations and Concepts

CCSS grade K not found in WY grade K

Counting and Number Sense

- Know number names and the count sequence up to 100, rather than 21, and is able to count upwards from any number in the count sequence.
- Read and represents number from 0 to 20, rather than 9.
- Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8)
- Compare two numbers between 0 and 10 presented as written numbers.

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MAK.2.1	Students recognize, name, compare, and sort geometric shapes (circle, square, triangle and rectangle).
MAK.2.2	Students select, use, and communicate organizational methods in a problem -solving situation using geometric shapes.

Additional content found in the Common Core State Standards related to Geometry

CCSS grade K not found in WY grade K

Identify and describe shapes

- Recognize, name, compare, and sort 2- and 3-dimensional geometric objects (e.g., hexagons, cubes, cones, cylinders, and spheres in addition to circles, squares, triangles, and rectangles).
- Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to.

Additional content found in the Common Core State Standards related to Geometry

CCSS grade K not found in WY grade K

- Identify shapes as two-dimensional or three-dimensional.

Reason with shapes

- Analyze and compare 2- and 3-dimensional shapes, in different sizes and orientations, using informal language to compare them and describe their parts.
- Model shapes by building shapes from components (e.g., sticks and clay balls) and drawing shapes.
- Compose (combine) simple shapes to form larger shapes (e.g., two triangles make a rectangle).

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks

MAK.3.1	Students apply estimation and measurement of length to content problems using non-standard units up to 9 units.

Additional content found in the Common Core State Standards related to Measurement

CCSS grade K not found in WY grade K

Measureable attributes

- Describe measureable attributes of objects, such as length or weight.
- Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks

MAK.4.1	Students recognize, describe, and create three-element patterns by using manipulatives.

Additional content found in the Common Core State Standards related to Algebra

CCSS grade K not found in WY grade K

N/A

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MAK.5.1	Students sort real objects to create graphs.
MAK.5.2	Students communicate conclusions from a set of data. (Which set has more or less?)

Additional content found in the Common Core State Standards related to Data Analysis and Probability

CCSS grade K not found in WY grade K

N/A

GRADE 1

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA1.1.1	Students use the concept of place value to read and represent numbers up to 99.
MA1.1.2	Students use sets of objects to compare values and order numerals.
MA1.1.3	Students use coins (penny, nickel, dime, and quarter) to compare values (more/less).
MA1.1.4	Students demonstrate computational fluency with basic facts (add to 10).
MA1.1.5	Students make a picture or use objects as strategies to solve problems.
MA1.1.6	Students communicate their choice of appropriate grade level procedures and results when performing operations in a problem-solving situation.

Additional content found in the Common Core State Standards related to Number Operations and Concepts

CCSS grade K not found in WY grade K

Counting and Number Sense

- Know number names and the count sequence up to 100, rather than 21, and is able to count upwards from any number in the count sequence.
- Reads and represents number from 0 to 20 (rather than 9).
- Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8)
- Compare two numbers between 0 and 10 presented as written numbers.

CCSS grade 1 not found in WY grade 1

Counting and Number Sense

- Count to 120, rather than 99.
- Use the concept of place value to compare two numbers up to 99, recording the results of the comparison with the symbols >, =, and <.

Computation

- In addition to demonstrating fluency with basic facts (addition and subtraction within 10), also adds within 100 using strategies such as:
  - Counting on – Adding numbers by counting up from a known quantity
  - Making 10 (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14);
  - creating equivalent but easier or known sums (e.g., adding 6 +7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).
  - Using mental math to add or subtract 10 more or 10 less than a given two digit number.
  - Subtracting multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90
  - using the relationship between addition and subtraction
  - applying properties of operations as strategies (students need not use formal terms for these properties), such as the commutative property

Additional content found in the Common Core State Standards related to Number Operations and Concepts	
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**
	(e.g., if 8+3=11 is known, than 3+8=11 is also known).

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA1.2.1	Students recognize, name, compare, and sort 2- and 3-dimensional geometric objects.
MA1.2.2	Students select, use, and communicate organizational methods in a problem-solving situation using 2- and 3- dimensional geometric objects.

Additional content found in the Common Core State Standards related to Geometry	
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**
Identify and describe shapes • Recognize, name, compare, and sort 2- and 3-dimensional geometric objects (e.g., hexagons, cubes, cones, cylinders, and spheres in addition to circles, squares, triangles, and rectangles). • Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to. • Identify shapes as two-dimensional or three-dimensional. *Reason with shapes* • Analyze and compare 2- and 3-dimensional shapes, in different sizes and orientations, using informal language to compare them and describe their parts. • Model shapes by building shapes from components (e.g., sticks and clay balls) and drawing shapes. • Compose (combine) simple shapes to form larger shapes (e.g., two triangles make a rectangle).	*Reason with shapes* • Distinguish between defining attributes (e.g., triangles are three-sided) versus non-defining attributes (e.g., color). • Compose 2- and 3-dimensional shapes to make composite shapes, and compose new shapes from the composite shape. • Partition circles and rectangles into two and four equal shares, and describe the shares using the words halves, fourths, and quarters, and describe the whole as "two of" or "four of" the shares.

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA1.3.1	Students apply estimation and measurement of length to content problems using non-standard units up to 99 units.
MA1.3.2	Students apply estimation and measurement of capacity to content problems using non-standard units.
MA1.3.3	Students tell time, using both analog and digital clocks to the nearest half-hour.

Additional content found in the Common Core State Standards related to Measurement	
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**
Measureable attributes • Describe measureable attributes of objects, such as length or weight. • Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	N/A

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA1.4.1	Students recognize, create, and describe four-element patterns by using manipulatives and graphic representations.
MA1.4.2	Students apply knowledge of repeating patterns when solving problems.

Additional content found in the Common Core State Standards related to Algebra	
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**
NA	*Operations and Algebraic Thinking* • Determine the unknown whole number in an addition or subtraction equation relating three whole numbers (e.g., 8 + ? = 11, 5 =☐ -3), and determine if an equation involving addition and subtraction are true or false. • Represent and solve word problems involving addition and subtraction of up to three whole numbers whose sum is less than or equal to 20 by using objects, drawings, and equations with a symbol for the unknown number to solve the problem. • Understand subtraction as an unknown-addend problem (e.g., subtract 10-8 by finding the number that makes 10 when added to 8).

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA1.5.1	Students collect and classify information to create graphs with pictures and report data in problem-solving situations.
MA1.5.2	Students communicate conclusions about a set of data using graphs with pictures.
MA1.5.3	Students perform and record (with tally marks) simple probability experiments.

Additional content found in the Common Core State Standards related to Data Analysis and Probability	
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**
N/A	*Represent and interpret data* • Interpret information (in addition to collecting and classifying information) with up to three categories, ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

GRADE 2

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA2.1.1	Students use the concept of place value to read and write designated numbers up to 999.
MA2.1.2	Students compare and order whole numbers up to 999.
MA2.1.3	Students use coins to compare the values and make combinations up to one dollar.
MA2.1.4	Students demonstrate computational fluency with basic facts (add to 20, subtract from 10).
MA2.1.5	Students use mental math (fact families) and estimation strategies (referent to a group of 10) to solve problems.
MA2.1.6	Students look for patterns and use guess and check as strategies to solve problems.
MA2.1.7	Students communicate their choice of appropriate grade level procedures and results when performing operations in a problem-solving situation.

Additional content found in the Common Core State Standards related to Number Operations and Concepts

CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
Counting and Number Sense • Know number names and the count sequence up to 100, rather than 21, and is able to count upwards from any number in the count sequence. • Reads and represents number from 0 to 20 (rather than 9). • Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8) • Compare two numbers between 0 and 10 presented as written numbers.	*Counting and Number Sense* • Count to 120, rather than 99. • Use the concept of place value to compare two numbers up to 99, recording the results of the comparison with the symbols >, =, and <. *Computation* • In addition to demonstrating fluency with basic facts (addition and subtraction within 10), also adds within 100 using strategies such as: o Counting on – Adding numbers by counting up from a known quantity o Making 10 (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); o creating equivalent but easier or known sums (e.g., adding 6 +7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). o Using mental math to add or subtract 10	*Counting and Number Sense* • Skip count by 5s, 10s, and 100s within 1000. • Use the concept of place value to compare (using >, =, and =) and order numbers up to 1000 (rather than 999). • Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. *Computation* • Demonstrate computational fluency within 100, (rather than 10 or 20), in addition to mental fluency within 20. • Represent addition and subtraction problems in different contexts (e.g. word problems or real world situations) • Develop, use, and communicate a variety of strategies to develop proficiency and an

Additional content found in the Common Core State Standards related to Number Operations and Concepts		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
	more or 10 less than a given two digit number. o Subtracting multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 o using the relationship between addition and subtraction o applying properties of operations as strategies (students need not use formal terms for these properties), such as the commutative property (e.g., if 8+3=11 is known, than 3+8=11 is also known).	understanding of addition and subtraction including: • Properties of operation • Properties of place value • Models • Arrays • Work with equal groups of objects (up to 20) (e.g., pair objects, counting by 2s, find the total number of objects in rectangular arrays with up to 5 rows and 5 columns), and use equations to express sums of equal addends, to gain foundations for multiplication. • Solve word problems in the context of money, including dollar bills, quarters, dimes, nickels, and pennies, using the $ and ¢ symbols appropriately.

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA2.2.1	Students name, classify, and describe 2- and 3-dimensional geometric objects.
MA2.2.2	Students identify lines of symmetry in various geometric objects.
MA2.2.3	Students select, use, and communicate organizational methods in problem- solving situations with 2- and 3- dimensional objects.

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
Identify and describe shapes • Recognize, name, compare, and sort 2- and 3-dimensional geometric objects (e.g., hexagons, cubes, cones, cylinders, and spheres in addition to circles, squares, triangles, and rectangles).	*Reason with shapes* • Distinguish between defining attributes (e.g., triangles are three-sided) versus non-defining attributes (e.g., color). • Compose 2- and 3-dimensional shapes to make	*Reason with shapes* • Draw shapes having specific attributes, such as a given number of angles or a given number of equal faces. • Partition a rectangle into rows and columns of

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
• Describe the relative positions of objects using terms such as above, below, beside, in front of, behind, and next to. • Identify shapes as two-dimensional or three-dimensional. *Reason with shapes* • Analyze and compare 2- and 3-dimensional shapes, in different sizes and orientations, using informal language to compare them and describe their parts. • Model shapes by building shapes from components (e.g., sticks and clay balls) and drawing shapes. • Compose (combine) simple shapes to form larger shapes (e.g., two triangles make a rectangle).	composite shapes, and compose new shapes from the composite shape. • Partition circles and rectangles into two and four equal shares, and describe the shares using the words halves, fourths, and quarters, and describe the whole as "two of" or "four of" the shares.	same-size squares and count to find the total number of them. • Partition circles and rectangles into three equal shares, describe the shares using the words thirds, and describe the whole as "three thirds", recognizing that equal shares of identical wholes do not need to have the same shape.

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA2.3.1	Students apply estimation and measurement of length to content problems using standard units to the nearest inch.
MA2.3.2	Students apply estimation and measurement of weight to content problems using non-standards units.
MA2.3.3	Students tell time, using both analog and digital clocks to the nearest five minutes.

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
Measureable attributes • Describe measureable attributes of objects, such as length or weight. • Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference.	N/A	*Comparison of measureable attributes* • Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen *Relate operations to measurement* • Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
		• Represent the number line using whole numbers as lengths from 0 and represent whole-number sums and differences within 100 on a number line diagram *Time* • Tell time using a.m. and p.m.

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA2.4.1	Students recognize, describe, create, and extend patterns by using manipulatives and graphic representations.
MA2.4.2	Students apply knowledge of appropriate grade-level patterns when solving problems.

Additional content found in the Common Core State Standards related to Algebra		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
N/A	*Operations and Algebraic Thinking* • Determine the unknown whole number in an addition or subtraction equation relating three whole numbers (e.g., 8 + ? = 11, 5 = -3), and determine if an equation involving addition and subtraction are true or false. • Represent and solve word problems involving addition and subtraction of up to three whole numbers whose sum is less than or equal to 20 by using objects, drawings, and equations with a symbol for the unknown number to solve the problem. • Understand subtraction as an unknown-addend problem (e.g., subtract 10-8 by finding the number that makes 10 when added to 8).	*Operations and Algebraic Thinking* • Use addition and subtraction within 100 to solve one- and two-step word problems with unknowns in all positions by using drawings and equations with a symbol for the unknown number to represent the problem.

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA2.5.1	Students collect, organize, and report data using graphs and Venn diagrams.
MA2.5.2	Students communicate conclusions about a set of data using graphs and Venn diagrams.
MA2.5.3	Students perform and record results of simple probability experiments using equally and unequally divided spinners.

Additional content found in the Common Core State Standards related to Data Analysis and Probability		
CCSS grade K not found in WY grade K	**CCSS grade 1 not found in WY grade 1**	**CCSS grade 2 not found in WY grade 2**
N/A	*Represent and interpret data* • Interpret information (in addition to collecting and classifying information) with up to three categories, ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	*Represent and interpret data* • Represent data using a line plot, picture graph and a bar graph with a single unit scale to represent a data sent with up to four categories. • Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

GRADE 3

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA3.1.1	Students use the concept of place value to read and write designated numbers up to 9,999.
MA3.1.2	Students compare and order whole numbers up to 9,999.
MA3.1.3	Students use coins and bills to compare the values and make combinations up to five dollars.
MA3.1.4	Students demonstrate computational fluency with basic facts (add to 20 and subtract from 20).
MA3.1.5	Students add and subtract two- and three-digit numbers with and without regrouping.
MA3.1.6	Students make an organized list and break problems into parts as strategies to solve problems.
MA3.1.7	Students use estimation strategies (rounding to the nearest 10 or 100, or front-end loading) to solve problems.
MA3.1.8	Students communicate their choice of procedures and results when performing number operations in a problem-solving situation.

Additional content found in the Common Core State Standards related to Number Operations and Concepts

CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
Counting and Number Sense • Count to 120, rather than 99. • Use the concept of place value to compare two numbers up to 99, recording the results of the comparison with the symbols >, =, and <. *Computation* • In addition to demonstrating fluency with basic facts (addition and subtraction within 10), also adds within 100 using strategies such as: o Counting on – Adding numbers by counting up from a known quantity o Making 10 (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); o creating equivalent but easier or known sums (e.g., adding 6 +7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). o Using mental math to add or subtract 10 more or 10 less than a given two digit	*Counting and Number Sense* • Skip count by 5s, 10s, and 100s within 1000. • Use the concept of place value to compare (using >, =, and =) and order numbers up to 1000 (rather than 999). • Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. *Computation* • Demonstrate computational fluency within 100, (rather than 10 or 20), in addition to mental fluency within 20. • Represent addition and subtraction problems in different contexts (e.g. word problems or real world situations) • Develop, use, and communicate a variety of strategies to develop proficiency and an understanding of addition and subtraction	*Counting and The Number System* • Compare fractions with the same numerator or the same denominator by reasoning about their size (using <, =, and >). • Recognize fractions as parts of wholes, as a number on a number line, and simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). *Computation* • Represent and solve word problems involving multiplication and division of whole numbers within 100. • Fluently multiply and divide within 100, and know from memory all products of two one-digit numbers. Multiply one-digit whole numbers by multiples of 10 in the range of 10-90. *Properties of operations* • Understand properties (e.g.., commutative, associative, distributive--note that students do not need to know the formal terms of these

Additional content found in the Common Core State Standards related to Number Operations and Concepts		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
number. o Subtracting multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 o using the relationship between addition and subtraction o applying properties of operations as strategies (students need not use formal terms for these properties), such as the commutative property (e.g., if 8+3=11 is known, than 3+8=11 is also known).	including: • Properties of operation • Properties of place value • Models • Arrays • Work with equal groups of objects (up to 20) (e.g., pair objects, counting by 2s, find the total number of objects in rectangular arrays with up to 5 rows and 5 columns), and use equations to express sums of equal addends, to gain foundations for multiplication. • Solve word problems in the context of money, including dollar bills, quarters, dimes, nickels, and pennies, using the $ and ¢ symbols appropriately.	properties) of multiplication and the relationship between multiplication and division.

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA3.2.1	Students recognize, name, compare, and sort 2- and 3-dimensional geometric objects.
MA3.2.2	Students describe and compare various geometric objects using congruency and lines of symmetry.
MA3.2.3	Students select, use, and communicate organizational methods in a problem-solving situation using 2- and 3- dimensional geometric objects.

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
Reason with shapes • Distinguish between defining attributes (e.g., triangles are three-sided) versus non-defining attributes (e.g., color). • Compose 2- and 3-dimensional shapes to make composite shapes, and compose new shapes from	*Reason with shapes* • Draw shapes having specific attributes, such as a given number of angles or a given number of equal faces. • Partition a rectangle into rows and columns of same-size squares and count to find the total	*Reason with shapes* • Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
the composite shape. • Partition circles and rectangles into two and four equal shares, and describe the shares using the words halves, fourths, and quarters, and describe the whole as "two of" or "four of" the shares.	number of them. • Partition circles and rectangles into three equal shares, describe the shares using the words thirds, and describe the whole as "three thirds", recognizing that equal shares of identical wholes do not need to have the same shape.	

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA3.3.1	Students apply estimation and measurement of length to content problems using actual measuring devices and express the results in U.S. customary units (inches, feet, and yards).
MA3.3.2	Students apply estimation and measurement of capacity in problem-solving situations using actual measuring devices and express the results in U.S. customary units (cups, quarts, and gallons).
MA3.3.3	Students demonstrate relationships within the U.S. customary units in problem- solving situations.
MA3.3.4	Students determine perimeter of rectangles and squares using models in problem solving situations.
MA3.3.5	Students tell time, using both analog and digital clocks, to the nearest minute using A.M. and P.M

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
N/A	*Comparison of measureable attributes* • Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen *Relate operations to measurement* • Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units • Represent the number line using whole numbers as lengths from 0 and represent whole-number sums and differences within 100 on a number line diagram *Time*	*Length* • Select and apply appropriate U.S. customary units (half inch, quarter inch) to the measurement of length using a ruler, and represent this data on a line plot. *Money and time* • Solve word problems involving addition and subtraction of time intervals in minutes *Capacity and mass* • Apply estimation and measurement of capacity using standard units (grams (g), kilograms (kg), and liters (l)). • Add, subtract, multiply, or divide to solve one-step word problems involving masses or

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
	• Tell time using a.m. and p.m.	capacities given in the same units. *Perimeter and Area* • Determine areas of plane figures by counting unit squares (square cm, square m, square in, square ft, and improvised units). • Relate area to the operations of multiplication and addition. • Determine perimeter of polygons in real world and mathematical problem solving situations, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA3.4.1	Students recognize, describe, create, and extend patterns by using manipulatives, numbers, and graphic representations.
MA3.4.2	Students apply knowledge of appropriate grade level patterns when solving problems.

Additional content found in the Common Core State Standards related to Algebra		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
Operations and Algebraic Thinking • Determine the unknown whole number in an addition or subtraction equation relating three whole numbers (e.g., 8 + ? = 11, 5 = □ -3), and determine if an equation involving addition and subtraction are true or false. • Represent and solve word problems involving addition and subtraction of up to three whole numbers whose sum is less than or equal to 20 by using objects, drawings, and equations with a	*Operations and Algebraic Thinking* • Use addition and subtraction within 100 to solve one- and two-step word problems with unknowns in all positions by using drawings and equations with a symbol for the unknown number to represent the problem.	*Operations and Algebraic Thinking* • Determine the unknown whole number in a multiplication or division equation relating three whole numbers. • Solve two-step word problems using the four operations with whole numbers, using the order of operations as needed. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental

Additional content found in the Common Core State Standards related to Algebra		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
symbol for the unknown number to solve the problem. • Understand subtraction as an unknown-addend problem (e.g., subtract 10-8 by finding the number that makes 10 when added to 8).		computation and estimation strategies such as rounding.

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA3.5.1	Students collect, organize, and compare data using graphs and Venn diagrams.
MA3.5.2	Students communicate conclusions about a set of data by interpreting information using graphs and Venn diagrams.
MA3.5.3	Students predict, perform, and record likely results of simple probability experiments.

Additional content found in the Common Core State Standards related to Data Analysis and Probability		
CCSS grade 1 not found in WY grade 1	**CCSS grade 2 not found in WY grade 2**	**CCSS grade 3 not found in WY grade 3**
Represent and interpret data • Interpret information (in addition to collecting and classifying information) with up to three categories, ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.	*Represent and interpret data* • Represent data using a line plot, picture graph and a bar graph with a single unit scale to represent a data sent with up to four categories. • Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	*Represent and interpret data* • Represent a data set with many categories using a scaled picture graph and a scaled bar graph. • Solve one- and two-step "how many more" and how many less" problems using information presented in scaled bar graphs.

GRADE 4

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA4.1.1	Students use the concept of place value to read and write whole numbers up to 999,999 in words, standard, and expanded form.
MA4.1.2	Students compare and order whole numbers.
MA4.1.3	Students use coins and bills to compare the values, make combinations up to $10.00, and make change from amounts up to $5.00.
MA4.1.4	Students demonstrate computational fluency with basic facts (add to 20, subtract from 20, multiply by 0-10).
MA4.1.5	Students add and subtract to thousands and multiply hundreds by a single digit.
MA4.1.6	Students explain their choice of problem-solving strategies and justify their results when performing whole number operations in problem-solving situations.
MA4.1.7	Students recognize commonly used fractions (halves, thirds, fourths) as parts of a whole using an area model.
MA4.1.8	Students use estimation strategies to solve problems.

Additional content found in the Common Core State Standards related to Number Operations and Concepts

CCSS grade 2 not found in WY grade 2	**CCSS grade 3 not found in WY grade 3**	**CCSS grade 4 not found in WY grade 4**
Counting and Number Sense • Skip count by 5s, 10s, and 100s within 1000. • Use the concept of place value to compare (using >, =, and =) and order numbers up to 1000 (rather than 999). • Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900. *Computation* • Demonstrate computational fluency within 100, (rather than 10 or 20), in addition to mental fluency within 20. • Represent addition and subtraction problems in different contexts (e.g. word problems or real	*Counting and The Number System* • Compare fractions with the same numerator or the same denominator by reasoning about their size (using <, =, and >). • • Recognize fractions as parts of wholes, as a number on a number line, and simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). *Computation* • Represent and solve word problems involving multiplication and division of whole numbers within 100. • Fluently multiply and divide within 100, and know from memory all products of two one-digit	*Counting and The Number System* • Use the concept of place value to read and write whole numbers up to 1,000,000 (rather than 999,999) in words, standard, and expanded form, and to round numbers based on their place up to 1,000,000. • Build fractions from unit fractions (e.g., 3/8 = 1/8 + 1/8 + 1/8), understanding a fraction a/b with a>1 as a sum of fractions 1/b. • Explain fractional equivalence and order fractions with different numerators and different denominators, using both visual models and equivalent fractions. • Convert between decimals and fractions (e.g., 0.62

Additional content found in the Common Core State Standards related to Number Operations and Concepts		
CCSS grade 2 not found in WY grade 2	**CCSS grade 3 not found in WY grade 3**	**CCSS grade 4 not found in WY grade 4**

world situations)
• Develop, use, and communicate a variety of strategies to develop proficiency and an understanding of addition and subtraction including:
  • Properties of operation
  • Properties of place value
  • Models
  • Arrays
• Work with equal groups of objects (up to 20) (e.g., pair objects, counting by 2s, find the total number of objects in rectangular arrays with up to 5 rows and 5 columns), and use equations to express sums of equal addends, to gain foundations for multiplication.
• Solve word problems in the context of money, including dollar bills, quarters, dimes, nickels, and pennies, using the $ and ¢ symbols appropriately.
	numbers. Multiply one-digit whole numbers by multiples of 10 in the range of 10-90.
	Properties of operations
	• Understand properties (e.g.., commutative, associative, distributive--note that students do not need to know the formal terms of these properties) of multiplication and the relationship between multiplication and division.
		= 62/100).
		Computation
		• Identify multiples and factors of designated numbers up to 100..
		• Use models for multiplication and division (arrays, area models)
		• Multiply thousands by a single digit, and multiply two two-digit numbers.
		• Divide four-digit numbers by one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division.
		• Solve word problems involving addition and subtraction of fractions using fractional models and equations.
		• Multiply fractions by whole numbers.

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA4.2.1	Students classify and describe 2- and 3- dimensional geometric objects by their attributes (sides, edges, vertices, and faces).
MA4.2.2	Students understand the images resulting from reflections (flips).
MA4.2.3	Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.
MA4.2.4	Students know characteristics of lines (parallel, perpendicular, and intersecting).

Additional content found in the Common Core State Standards related to related to Geometry

CCSS grade 2 not found in WY grade 2	CCSS grade 3 not found in WY grade 3	CCSS grade 4 not found in WY grade 4
Reason with shapes • Draw shapes having specific attributes, such as a given number of angles or a given number of equal faces. • Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. • Partition circles and rectangles into three equal shares, describe the shares using the words thirds, and describe the whole as "three thirds", recognizing that equal shares of identical wholes do not need to have the same shape.	*Reason with shapes* • Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.	*Lines and angles* • Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. • Identify line-symmetric, 2-dimensional figures and draw lines of symmetry.

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA4.3.1	Students select and apply appropriate U.S. customary units (half inch, quarter inch, feet, and yards) to the estimation and measurement of length in real-world problems using actual measuring devices.
MA4.3.2	Students select and apply appropriate U.S. customary units (ounces and pounds) to the estimation and measurement of weight in real-world problems using actual measuring devices.
MA4.3.3	Students select and apply appropriate U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, and gallons) to the estimation and measurement of capacity in real-world problems using actual measuring devices.
MA4.3.4	Students demonstrate relationships within the U.S. customary system, given an equivalence chart, in problem-solving situations.
MA4.3.5	Students determine area and perimeter of rectangles and squares using models in problem-solving situations.
MA4.3.6	Students use time, in problem-solving situations to: • compare relationships among seconds, minutes, and hours; • use elapsed time to the nearest minute.

Additional content found in the Common Core State Standards related to related to Measurement		
CCSS grade 2 not found in WY grade 2	**CCSS grade 3 not found in WY grade 3**	**CCSS grade 4 not found in WY grade 4**
Comparison of measureable attributes • Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen *Relate operations to measurement* • Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units • Represent the number line using whole numbers as lengths from 0 and represent whole-number sums and differences within 100 on a number line diagram *Time* • Tell time using a.m. and p.m.	*Length* • Select and apply appropriate U.S. customary units (half inch, quarter inch) to the measurement of length using a ruler, and represent this data on a line plot. *Money and time* • Solve word problems involving addition and subtraction of time intervals in minutes *Capacity and mass* • Apply estimation and measurement of capacity using standard units (grams (g), kilograms (kg), and liters (l)). • Add, subtract, multiply, or divide to solve one-step word problems involving masses or capacities given in the same units. *Perimeter and Area* • Determine areas of plane figures by counting unit squares (square cm, square m, square in, square ft, and improvised units). • Relate area to the operations of multiplication and addition. • Determine perimeter of polygons in real world and mathematical problem solving situations, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	*Conversion of units* • Convert within the metric system (e.g., km, m, cm; kg, g; l, ml). *Angles* • Measure angles with a protractor, and sketch angles of a specified measure. • Solve problems involving angle measure such as solving addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA4.4.1	Students recognize, describe, extend, create, and generalize patterns by using manipulatives, numbers, and graphic representations.
MA4.4.2	Students apply knowledge of appropriate grade level patterns when solving problems.
MA4.4.3	Students explain a rule given a pattern or sequence.

Additional content found in the Common Core State Standards related to Algebra

CCSS grade 2 not found in WY grade 2	**CCSS grade 3 not found in WY grade 3**	**CCSS grade 4 not found in WY grade 4**
Operations and Algebraic Thinking • Use addition and subtraction within 100 to solve one- and two-step word problems with unknowns in all positions by using drawings and equations with a symbol for the unknown number to represent the problem.	*Operations and Algebraic Thinking* • Determine the unknown whole number in a multiplication or division equation relating three whole numbers. • Solve two-step word problems using the four operations with whole numbers, using the order of operations as needed. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies such as rounding.	*Operations and Algebraic Thinking* • Solve problems involving multiplicative comparison (e.g., 35 = 5 x7 is a statement that 35 is 5 times as many as 7), and distinguish multiplicative comparison from additive comparison (e.g., 10 = 7 + 3 is a statement that 10 is 7 more than 3). • Use the four operations to solve multi-step word problems, using equations with a letter standing for the unknown quantity and assess the reasonableness of answers using mental computations and estimation.

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA4.5.1	Students collect, organize, and compare data in graphs, Venn diagrams, tables, and charts.
MA4.5.2	Students communicate conclusions about a set of data by interpreting information using graphs, Venn diagrams, tables, and charts.
MA4.5.3	Students predict, perform, and record results of probability experiments.
MA4.5.4	Students predict all possible outcomes of a given situation or event.

Additional content found in the Common Core State Standards related to related to Data Analysis and Probability

CCSS grade 2 not found in WY grade 2	**CCSS grade 3 not found in WY grade 3**	**CCSS grade 4 not found in WY grade 4**
Represent and interpret data • Represent data using a line plot, picture graph and a bar graph with a single unit scale to represent a data sent with up to four categories. • Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.	*Represent and interpret data* • Represent a data set with many categories using a scaled picture graph and a scaled bar graph. • Solve one- and two-step "how many more" and how many less" problems using information presented in scaled bar graphs.	N/A

GRADE 5

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA5.1.1	Students use the concept of place value to read and write whole numbers (in words, standard, and expanded form) and decimals (10ths and 100ths).
MA5.1.2	Students demonstrate computational fluency with basic facts for all four operations, including identifying multiples and factors of designated numbers up to 100.
MA5.1.3	Students demonstrate an understanding of whole number operations by: • explaining the relationships between the operations of addition, subtraction, multiplication, and division; and • multiplying by two-digit whole numbers and dividing by single-digit whole numbers.
MA5.1.4	Students explain their choice of estimation or problem-solving strategies and justify results when performing number operations in problem-solving situations.
MA5.1.5	Students add and subtract decimals to hundredths and solve problems in the context of money.
MA5.1.6	Students demonstrate an understanding of fractions as parts of wholes.
MA5.1.7	Students order, compare, add, and subtract fractions with like denominators.

Additional content found in the Common Core State Standards related to related to Number Operations and Concepts

CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
Counting and The Number System • Compare fractions with the same numerator or the same denominator by reasoning about their size (using <, =, and >). • • Recognize fractions as parts of wholes, as a number on a number line, and simple equivalent fractions (e.g., 1/2 = 2/4, 4/6 = 2/3). *Computation* • Represent and solve word problems involving multiplication and division of whole numbers within 100. • Fluently multiply and divide within 100, and know from memory all products of two one-digit numbers. Multiply one-digit whole numbers by multiples of 10 in the range of 10-90.	*Counting and The Number System* • Use the concept of place value to read and write whole numbers up to 1,000,000 (rather than 999,999) in words, standard, and expanded form, and to round numbers based on their place up to 1,000,000. • Build fractions from unit fractions (e.g., 3/8 = 1/8 + 1/8 + 1/8), understanding a fraction a/b with a>1 as a sum of fractions 1/b. • Explain fractional equivalence and order fractions with different numerators and different denominators, using both visual models and equivalent fractions. • Convert between decimals and fractions (e.g., 0.62 = 62/100). *Computation*	*Counting and Number Sense* • Use the concept of place value to read, write, compare, and round decimals to the 1000ths place (rather than the 100ths). • Use whole number exponents to denote powers of 10. *Computation* • Divide by two digit (rather than single-digit) whole numbers • Multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value and/or properties of operations. • Order, compare, add, and subtract fractions (including mixed numbers) with unlike, as well as like, denominators.

Additional content found in the Common Core State Standards related to related to Number Operations and Concepts		
CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
Properties of operations • Understand properties (e.g.., commutative, associative, distributive--note that students do not need to know the formal terms of these properties) of multiplication and the relationship between multiplication and division.	• Identify multiples and factors of designated numbers up to 100.. • Use models for multiplication and division (arrays, area models) • Multiply thousands by a single digit, and multiply two two-digit numbers. • Divide four-digit numbers by one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. • Solve word problems involving addition and subtraction of fractions using fractional models and equations. • Multiply fractions by whole numbers.	• Multiply fractions and mixed numbers • Solve word problems involving addition, subtraction, and multiplication of fractions and mixed numbers using fractional models and/or equations to represent the problem. • Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. • Divide unit fractions by whole numbers and whole numbers by unit fractions • Write and evaluate numerical expressions using grouping symbols (e.g., parentheses, brackets, or braces).

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA5.2.1	Students describe, draw, and classify two-dimensional geometric figures such as triangles, quadrilaterals, and circles.
MA5.2.2	Students describe, identify, and classify three-dimensional geometric figures such as cylinders, cones, pyramids, rectangular prisms, and spheres.
MA5.2.3	Students describe and compare various geometric objects using congruency and lines of symmetry appropriate to grade level.
MA5.2.4	Students select, use, and communicate organizational methods in problem-solving situations appropriate to grade level.

Additional content found in the Common Core State Standards related to related to Geometry		
CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
Reason with shapes • Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.	*Lines and angles* • Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. • Identify line-symmetric 2-dimensional figures and draw lines of symmetry.	N/A

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA5.3.1	Students apply estimation and measurement of length to content problems using actual measuring devices and express the results in U.S. customary units (parts of inch-halves/fourths, eighths inches, feet, yards, and miles).
MA5.3.2	Students apply estimation and measurement of weight to content problems using actual measuring devices and express the results in U.S. customary units (ounces and pounds).
MA5.3.3	Students apply estimation and measurement of capacity in real-world problem-solving situations using actual measuring devices and express the results in U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, and gallons).
MA5.3.4	Students demonstrate relationships within the U.S. customary units, given an equivalence chart, in problem-solving situations appropriate to grade level.
MA5.3.5	Students determine area and perimeter of triangles, rectangles, and squares using models in problem-solving situations using appropriate units.
MA5.3.6	Students use time, in problem-solving situations to: • compare relationships among seconds, minutes, hours, and days, and • use elapsed time to the nearest minute.

Additional content found in the Common Core State Standards related to related to Measurement

CCSS grade 3 not found in WY grade 3

Length

- Select and apply appropriate U.S. customary units (half inch, quarter inch) to the measurement of length using a ruler, and represent this data on a line plot.

Money and time

- Solve word problems involving addition and subtraction of time intervals in minutes

Capacity and mass

- Apply estimation and measurement of capacity using standard units (grams (g), kilograms (kg), and liters (l)).
- Add, subtract, multiply, or divide to solve one-step word problems involving masses or capacities given in the same units.

Perimeter and Area

- Determine areas of plane figures by counting unit squares (square cm, square m, square in, square ft, and improvised units).

CCSS grade 4 not found in WY grade 4

Conversion of units

- Convert within the metric system (e.g., km, m, cm; kg, g; l, ml).

Angles

- Measure angles with a protractor, and sketch angles of a specified measure.
- Solve problems involving angle measure such as solving addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.

CCSS grade 5 not found in WY grade 5

Conversion of units

- Use conversion of measurement units within a given system to solve multi-step, real world problems.

Capacity and mass

- Measure volume (capacity) by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.
- Apply the formulas $V = lwh$ and $V = bh$ for rectangular prisms in the context of solving real-world and mathematical problems, in addition to using models.
- Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

Additional content found in the Common Core State Standards related to related to Measurement		
CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
• Relate area to the operations of multiplication and addition. • Determine perimeter of polygons in real world and mathematical problem solving situations, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.		

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA5.4.1	Students recognize, describe, extend, create, and generalize patterns by using manipulatives, numbers, and graphic representations, including charts and graphs.
MA5.4.2	Students apply knowledge of patterns when solving problems appropriate to grade level.
MA5.4.3	Students represent the idea of a variable as an unknown quantity, a letter, or a symbol within addition and subtraction sentences using whole numbers.

Additional content found in the Common Core State Standards related to related to Algebra		
CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
Operations and Algebraic Thinking • Determine the unknown whole number in a multiplication or division equation relating three whole numbers. • Solve two-step word problems using the four operations with whole numbers, using the order of operations as needed. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies such as rounding.	*Operations and Algebraic Thinking* • Solve problems involving multiplicative comparison (e.g., 35 = 5 x7 is a statement that 35 is 5 times as many as 7), and distinguish multiplicative comparison from additive comparison (e.g., 10 = 7 + 3 is a statement that 10 is 7 more than 3). • Use the four operations to solve multi-step word problems, using equations with a letter standing for the unknown quantity and assess the reasonableness of answers using mental computations and estimation.	*Operations and Algebraic Thinking* • Write and evaluate numerical expressions using grouping symbols (e.g., parentheses, brackets, or braces). • Translate word phrases which involve addition and subtraction into mathematical expressions (e.g., express the calculation "add 8 and 7, then multiply by 2" as 2 x (8+7)). *Coordinate system* • Understand and use basic concepts of the coordinate system, including plotting points in all four quadrants.

Additional content found in the Common Core State Standards related to related to Algebra		
CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
		• Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values in the context of the situation.

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA5.5.1	Students systematically collect, organize, and describe/represent categorical data using bar graphs.
MA5.5.2	Students find and interpret mode for data sets in a problem-solving setting appropriate to grade level. Students communicate their findings.
MA5.5.3	Students predict and record outcomes of probability experiments or simulations.

Additional content found in the Common Core State Standards related to related to Data Analysis and Probability		
CCSS grade 3 not found in WY grade 3	**CCSS grade 4 not found in WY grade 4**	**CCSS grade 5 not found in WY grade 5**
Represent and interpret data • Represent a data set with many categories using a scaled picture graph and a scaled bar graph. • Solve one- and two-step "how many more" and how many less" problems using information presented in scaled bar graphs.	N/A	*Represent and interpret data* • Collect, organize and describe a data set of measurements in fractions of a unit (1/2,1/4, 1/8) using line graphs, and use operations on fractions to solve problems involving information presented in line graphs.

GRADE 6

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA6.1.1	Students use the concept of place value to read and write decimals (to 1000ths) in words, standard, and expanded form.
MA6.1.2	Students multiply decimals (10ths & 100ths) and divide whole numbers by 2-digit divisors and divide decimals by whole numbers
MA6.1.3	Students represent the number line using integers.
MA6.1.4	Students explain their choice of estimation and problem solving strategies and justify results when performing number operations with fractions and decimals in problem-solving situations.
MA6.1.5	Students identify prime and composite numbers and apply prime factorization to numbers less than 100.
MA6.1.6	Students demonstrate an understanding of fractions and decimals by: • representing fractions as division of whole numbers; • converting between mixed numbers and improper fractions; • simplifying fractions and mixed numbers; • writing fractions in equivalent forms; • using parts of a set; • rounding decimal numbers to 10ths, 100ths, and whole numbers (units) place; and • converting between decimals (from .01 to .99), fractions and representing percentages.
MA6.1.7	Students add and subtract mixed numbers with like denominators.
MA6.1.8	Students represent repeated multiplication in exponential form.

Additional content found in the Common Core State Standards related to related to Number Operations and Concepts

CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
Counting and The Number System • Use the concept of place value to read and write whole numbers up to 1,000,000 (rather than 999,999) in words, standard, and expanded form, and to round numbers based on their place up to 1,000,000. • Build fractions from unit fractions (e.g., 3/8 = 1/8 + 1/8 + 1/8), understanding a fraction a/b with a>1 as a sum of fractions 1/b. • Explain fractional equivalence and order fractions with different numerators and different	*Counting and Number Sense* • Use the concept of place value to read, write, compare, and round decimals to the 1000ths place (rather than the 100ths). • Use whole number exponents to denote powers of 10. *Computation* • Divide by two digit (rather than single-digit) whole numbers • Multiply and divide decimals to hundredths, using	*Counting and Number Sense* • Represent, order, and interpret rational numbers that are greater than or equal to 0 in a variety of equivalent forms and in real world contexts, such as elevation above/below sea level or credits/debits. • Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation

Additional content found in the Common Core State Standards related to related to Number Operations and Concepts		
CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
denominators, using both visual models and equivalent fractions. • Convert between decimals and fractions (e.g., 0.62 = 62/100). *Computation* • Identify multiples and factors of designated numbers up to 100.. • Use models for multiplication and division (arrays, area models) • Multiply thousands by a single digit, and multiply two two-digit numbers. • Divide four-digit numbers by one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. • Solve word problems involving addition and subtraction of fractions using fractional models and equations. • Multiply fractions by whole numbers.	concrete models or drawings and strategies based on place value and/or properties of operations. • Order, compare, add, and subtract fractions (including mixed numbers) with unlike, as well as like, denominators. • Multiply fractions and mixed numbers • Solve word problems involving addition, subtraction, and multiplication of fractions and mixed numbers using fractional models and/or equations to represent the problem. • Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. • Divide unit fractions by whole numbers and whole numbers by unit fractions • Write and evaluate numerical expressions using grouping symbols (e.g., parentheses, brackets, or braces).	• Evaluate whole numbers expressed in exponential form. *Computation* • Find quotients of fractions including word problems using visual models and equations • Find the greatest common factor of two numbers less than or equal to 100 • Find the least common multiple of two whole numbers less than or equal to 12. *Properties of operations* • Use distributive property for numerical expressions (e.g., express 36 + 8 as 4 (9 + 2)). *Ratios and Proportional Relationships* • Understands the concept of ratio and its different forms and makes tables of equivalent ratios • Solve problems with ratios and describes categorical data sets using ratios

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA6.2.1	Students classify, describe, compare, and draw representations of 1- and 2- dimensional objects and angles.
MA6.2.2	Students identify and classify congruent objects by properties appropriate to grade level.
MA6.2.3	Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.

Additional content found in the Common Core State Standards related to related to Geometry		
CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
Reason with shapes • Partition shapes into parts with equal areas, and express the area of each part as a unit fraction of the whole.	*Lines and angles* • Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines.	*Drawing in the coordinate plane* • Represent polygons using a rectangular coordinate plane given coordinates for the vertices. • Use coordinates to fine the length of a side joining

Additional content found in the Common Core State Standards related to related to Geometry		
CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
	• Identify line-symmetric 2-dimensional figures and draw lines of symmetry.	points with the same first coordinate or same second coordinate. *Area, surface area, and volume* • Represent 3-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures when solving real-world and mathematical problems.

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA6.3.1	Students apply estimation and measurement of length to content problems and express the results in metric units (centimeters and meters).
MA6.3.2	Students apply estimation and measurement of weight to content problems and express the results in U.S. customary units (ounces, pounds, and tons).
MA6.3.3	Students apply estimation and measurement of capacity to content problems and express the results in U.S. customary units (teaspoons, tablespoons, cups, pints, quarts, gallons).
MA6.3.4	Students demonstrate relationships within the U.S. customary units for weight and capacity and within the metric system (centimeters to meters) in problem-solving situations.
MA6.3.5	Students determine the area and perimeter of regular polygons and the area of parallelograms, with and without models.

Additional content found in the Common Core State Standards related to related to Measurement		
CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
Conversion of units • Convert within the metric system (e.g., km, m, cm; kg, g; l, ml). *Angles* • Measure angles with a protractor, and sketch angles of a specified measure. • Solve problems involving angle measure such as solving addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems.	*Conversion of units* • Use conversion of measurement units within a given system to solve multi-step, real world problems. *Capacity and mass* • Measure volume (capacity) by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. • Apply the formulas $V = lwh$ and $V = bh$ for rectangular prisms in the context of solving real-world and mathematical problems, in addition to using models. • Find volumes of solid figures composed of two	*Area and surface area* • Determine the area of right triangles and other triangles, using appropriate methods (e.g., composition and decomposition of shapes). *Capacity/volume and mass* • Apply estimation and measurement of capacity/volume to content problems using the appropriate methods (e.g., unit cubes, formulas) to solve real-world and mathematical problems involving volume of a right rectangular prism with fractional edge lengths.

Additional content found in the Common Core State Standards related to related to Measurement		
CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
	non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA6.4.1	Students recognize, describe, extend, create, and generalize patterns, such as numeric sequences, by using manipulatives, numbers, graphic representations, including charts and graphs.
MA6.4.2	Students apply their knowledge of patterns to describe a constant rate of change when solving problems.
MA6.4.3	Students represent the idea of a variable as an unknown quantity, a letter, or a symbol within any whole number operation.

Additional content found in the Common Core State Standards related to related to Algebra		
CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
Operations and Algebraic Thinking • Solve problems involving multiplicative comparison (e.g., 35 = 5 x7 is a statement that 35 is 5 times as many as 7), and distinguish multiplicative comparison from additive comparison (e.g., 10 = 7 + 3 is a statement that 10 is 7 more than 3). • Use the four operations to solve multi-step word problems, using equations with a letter standing for the unknown quantity and assess the reasonableness of answers using mental computations and estimation.	*Operations and Algebraic Thinking* • Write and evaluate numerical expressions using grouping symbols (e.g., parentheses, brackets, or braces). • Translate word phrases which involve addition and subtraction into mathematical expressions (e.g., express the calculation "add 8 and 7, then multiply by 2" as 2 x (8+7)).	*Expressions and Equations* • Write, model, and evaluate equations representing quantitative relationships between independent and dependent variables. • Write, model, and evaluate expressions involving whole number exponents and/or letter variables. o Identify what an expression is, how variables are used in expressions, and parts of an expression using mathematical terms (e.g. sum, product, term, quotient) o Understands and generates equivalent expressions o Understands the components of an equation as it relates to expressions. • Constructs and solves word problems that require the representation of these problems as expressions or equations.

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA6.5.1	Students systematically collect, organize, and describe/represent numeric data using line graphs.
MA6.5.2	Students, given a scenario, recognize and communicate the likelihood of events using concepts from probability (i.e., impossible, equally likely, certain) appropriate to grade level.

Additional content found in the Common Core State Standards related to Data Analysis and Probability

CCSS grade 4 not found in WY grade 4	**CCSS grade 5 not found in WY grade 5**	**CCSS grade 6 not found in WY grade 6**
N/A	*Represent and interpret data* • Collect, organize and describe a data set of measurements in fractions of a unit (1/2,1/4, 1/8) using line graphs, and use operations on fractions to solve problems involving information presented in line graphs.	*Statistical variability* • Develops an understanding of statistical variability. o Recognizes a statistical question as one that anticipates variability o Understands that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape. o Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. *Distributions* • Organize and describe data using histograms, box plots, and dot plots.

GRADE 7

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA7.1.1	Students represent and order rational numbers that are greater than or equal to 0 in a variety of equivalent forms in problem-solving situations.
MA7.1.2	Students use basic operations with integers in problem-solving situations.
MA7.1.3	Students divide decimal numbers by decimal numbers.
MA7.1.4	Students explain their choice of estimation and problem- solving strategies and justify results when performing number operations with fractions and decimals in problem-solving situations appropriate to grade level. Students add and subtract fractions and mixed numbers.
MA7.1.5	Students multiply and divide fractions and mixed numbers.
MA7.1.6	Students evaluate whole numbers expressed in exponential form.
MA7.1.7	Students apply the order of operations (whole numbers including grouping symbols and operations, excluding roots and powers) in problem-solving situations.

Additional content found in the Common Core State Standards related to Number Operations and Concepts

CCSS grade 5 not found in WY grade 5	CCSS grade 6 not found in WY grade 6	CCSS grade 7 not found in WY grade 7
Counting and Number Sense • Use the concept of place value to read, write, compare, and round decimals to the 1000ths place (rather than the 100ths). • Use whole number exponents to denote powers of 10. *Computation* • Divide by two digit (rather than single-digit) whole numbers • Multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value and/or properties of operations. • Order, compare, add, and subtract fractions (including mixed numbers) with unlike, as well as like, denominators. • Multiply fractions and mixed numbers • Solve word problems involving addition,	*Counting and Number Sense* • Represent, order, and interpret rational numbers that are greater than or equal to 0 in a variety of equivalent forms and in real world contexts, such as elevation above/below sea level or credits/debits. • Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation *Computation* • Find quotients of fractions including word problems using visual models and equations • Find the greatest common factor of two numbers less than or equal to 100 • Find the least common multiple of two whole numbers less than or equal to 12.	*Counting and Number Sense* • Represent rational numbers in equivalent decimal form including repeating and non-repeating decimals *Computation* • Understand and use properties of operations with rational numbers (e.g., represents the addition and subtraction of rational numbers on the number line, apply the rules of multiplication on rational numbers) *Ratios and Proportional Relationships* • Recognize proportional relationships between quantities in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships, and represent the relationships with equations. • Use proportional relationships to solve real world problems (e.g., simple interest, tax, markups and

Additional content found in the Common Core State Standards related to Number Operations and Concepts		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
subtraction, and multiplication of fractions and mixed numbers using fractional models and/or equations to represent the problem. • Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. • Divide unit fractions by whole numbers and whole numbers by unit fractions	*Properties of operations* • Use distributive property for numerical expressions (e.g., express 36 + 8 as 4 (9 + 2)).	markdowns, gratuities and commissions, fees, percent increase and decrease, percent error) • Find unit rates using ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units (e.g., if a person walks ½ mile in each ¼ hour, compute the unit rate as the complex fraction $^{1/2}/_{1/4}$ = 2 miles per hour.

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA7.2.1	Students classify and describe one- and two-dimensional geometric objects, including: • lines, rays, segments, and angles; • parallel and perpendicular relationships; and • regular polygon types.
MA7.2.2	Students make conjectures about geometric figures based on knowledge of congruence and similarity.
MA7.2.3	Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
Lines and angles • Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. • Identify line-symmetric 2-dimensional figures and draw lines of symmetry.	*Area, Surface Area, and Volume* • Determine the area of right triangles, other triangles, special quadrilaterals, and polygons, using appropriate methods (e.g., composition and decomposition of shapes). • Select and use the appropriate methods (e.g., unit cubes, formulas) to solve real-world and mathematical problems involving volume of a right rectangular prism with fractional edge lengths.	*Angle measures* • Solve problems of angle measure using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem. *Geometrical figures* • Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. • Draw (freehand, with ruler and protractor, and

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
	• Represent 3-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures when solving real-world and mathematical problems. *Drawing in the coordinate plane* • Represent polygons using a rectangular coordinate plane given coordinates for the vertices. • Use coordinates to fine the length of a side joining points with the same first coordinate or same second coordinate.	with technology) figures from a mathematical description (e.g., construct triangles from three measures of angles or sides and notice when the conditions determine a unique triangle, more than one triangle, or no triangle). • Describe the 2-dimensional figures that result from slicing 3-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA7.3.1	Students apply estimation and measurement of length to content problems and convert within the U.S. customary (in, ft, yd, mi) and within the metric system (mm, cm, m, km).
MA7.3.2	Students apply estimation and measurement of weight to content problems expressing the results in metric units (g, kg).
MA7.3.3	Students apply estimation and measurement of capacity to content problems expressing the results in metric units (liters).
MA7.3.4	Students determine the circumference of a circle using models.
MA7.3.5	Students calculate the areas of triangles and trapezoids.
MA7.3.6	Students measure angles with a protractor.

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
Conversion of units • Use conversion of measurement units within a given system to solve multi-step, real world problems. *Capacity and mass* • Measure volume (capacity) by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. • Apply the formulas $V = lwh$ and $V = bh$ for	*Area and surface area* • Determine the area of right triangles and other triangles, using appropriate methods (e.g., composition and decomposition of shapes). *Capacity/volume and mass* • Apply estimation and measurement of capacity/volume to content problems using the appropriate methods (e.g., unit cubes, formulas) to solve real-world and mathematical problems	*Area, surface area, and volume* • Select and use the appropriate methods, tools, and units to solve real-world and mathematical problems involving volume and surface area of 2- and 3-dimensional objects composed of triangles, quadrilaterals, and polygons *Circles* • Select and use the appropriate methods (e.g., formulas), tools, and units to solve problems

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
rectangular prisms in the context of solving real-world and mathematical problems, in addition to using models. • Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.	involving volume of a right rectangular prism with fractional edge lengths.	involving the area and circumference of a circle. • Give an informal derivation of the relationship between the circumference and area of a circle.

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA7.4.1	Students translate word phrases, which involve addition and subtraction, into mathematical expressions.
MA7.4.2	Students solve one-step linear equations.
MA7.4.3	Students evaluate algebraic expressions and formulas, using order of operations, given positive integer values for variables.
MA7.4.4	Students understand and use basic concepts of the coordinate system, including plotting points in all four quadrants.

Additional content found in the Common Core State Standards related to Algebra		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
Operations and Algebraic Thinking • Translate word phrases which involve addition and subtraction into mathematical expressions (e.g., express the calculation "add 8 and 7, then multiply by 2" as 2 x (8+7)).	*Expressions and Equations* • Write, model, and evaluate equations representing quantitative relationships between independent and dependent variables. • Write, model, and evaluate expressions involving whole number exponents and/or letter variables. o Identify what an expression is, how variables are used in expressions, and parts of an expression using mathematical terms (e.g. sum, product, term, quotient) o Understands and generates equivalent expressions o Understands the components of an equation as it relates to expressions.	*Expressions and Equations* • Use properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. • Generates equivalent algebraic expressions to understand different representations • Use algebraic concepts, symbols, and skills to solve multi-step real-life and mathematical problems, including problems which o Involve numbers (positive and negative rational numbers) o Involve algebraic expressions and equations, including linear equations and

Additional content found in the Common Core State Standards related to Algebra		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
	• Constructs and solves word problems that require the representation of these problems as expressions or equations.	inequalities.

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA7.5.1	Students systematically collect, organize, describe, and analyze data using histograms.
MA7.5.2	Students calculate mean, median, mode, and range for data sets and use in real world setting.
MA7.5.3	Students predict, compare, and report as ratios probable outcomes of experiments or simulations (i.e., impossible, equally likely, certain).

Additional content found in the Common Core State Standards related to Data Analysis and Probability		
CCSS grade 5 not found in WY grade 5	**CCSS grade 6 not found in WY grade 6**	**CCSS grade 7 not found in WY grade 7**
Represent and interpret data • Collect, organize and describe a data set of measurements in fractions of a unit (1/2,1/4, 1/8) using line graphs, and use operations on fractions to solve problems involving information presented in line graphs.	*Statistical variability* • Develops an understanding of statistical variability. o Recognizes a statistical question as one that anticipates variability o Understands that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape. o Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. *Distributions* • Organize and describe data using histograms, box plots, and dot plots.	*Sampling* • Understand that statistics can be used to gain information about a population by examining a representative sample of that population. • Use random sampling to draw inferences about a population with an unknown characteristic of interest, and generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. *Probability* • Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

GRADE 8

1. NUMBER OPERATIONS AND CONCEPTS: Students use numbers, number sense, and number relationships in a problem-solving situation.

Wyoming benchmarks	
MA8.1.1	Students represent and apply numbers in a variety of equivalent forms (such as changing from percent to decimal to fraction, etc.) and in a problem-solving context: • prime factors, factors, and multiples; • rational numbers and proportions; and • square roots and powers.
MA8.1.2	Students extend understanding and use of basic arithmetic operations on rational numbers. • Simplify numerical expressions using the order of operations; • Order rational numbers expressed in a variety of forms
MA8.1.3	Students explain their choice of estimation and problem- solving strategies and justify results of solutions in problem-solving situations involving rational numbers.
MA8.1.4	Students understand properties of operations with rational numbers.

Additional content found in the Common Core State Standards related to Number Operations and Concepts		
CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**
Counting and Number Sense • Represent, order, and interpret rational numbers that are greater than or equal to 0 in a variety of equivalent forms and in real world contexts, such as elevation above/below sea level or credits/debits. • Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation *Computation* • Find quotients of fractions including word problems using visual models and equations • Find the greatest common factor of two numbers	*The Number System* • Represent rational numbers in equivalent decimal form including repeating and non-repeating decimals *Computation* • Understand and use properties of operations with rational numbers (e.g., represents the addition and subtraction of rational numbers on the number line, apply the rules of multiplication on rational numbers) *Ratios and Proportional Relationships* • Recognize proportional relationships between quantities in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships, and represent the relationships with	*The Number System* • Understand and approximate irrational numbers and represent them on the number line • Understand informally that every number has a decimal expansion • Know and apply the properties of integer exponents • Evaluate cube roots of perfect cubes • Estimate large or small numbers using powers of ten • Calculate large or small numbers using scientific notation *Ratios and Proportional Relationships* • Graphs and compares proportional relationships

Additional content found in the Common Core State Standards related to Number Operations and Concepts		
CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**
less than or equal to 100 • Find the least common multiple of two whole numbers less than or equal to 12. *Properties of operations* • Use distributive property for numerical expressions (e.g., express 36 + 8 as 4 (9 + 2)).	equations. • Use proportional relationships to solve real world problems (e.g., simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error)	

2. GEOMETRY: Students apply geometric concepts, properties, and relationships in a problem-solving situation.

Wyoming benchmarks	
MA8.2.1	Students classify and describe one-, two-, and three-dimensional geometric objects, including: • lines, rays, segments, and angles; • parallel and perpendicular relationships; • circles and spheres; • regular polygon types; • right prisms, cylinders, cones, and pyramids.
MA8.2.2	Students make conjectures about geometric objects based on knowledge of geometric transformations, congruence, and similarity.
MA8.2.3	Students use geometric formulas including the Pythagorean Theorem.
MA8.2.4	Students communicate the reasoning used in identifying geometric relationships in problem-solving situations appropriate to grade level.
MA8.2.5	Students represent geometric figures using a rectangular coordinate plane.

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**
Area, Surface Area, and Volume • Determine the area of right triangles, other triangles, special quadrilaterals, and polygons, using appropriate methods (e.g., composition and decomposition of shapes). • Select and use the appropriate methods (e.g., unit cubes, formulas) to solve real-world and mathematical problems involving volume of a right rectangular prism with fractional edge lengths.	*Geometrical figures* • Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. • Draw (freehand, with ruler and protractor, and with technology) figures from a mathematical description (e.g., construct triangles from three measures of angles or sides and notice when the conditions determine a unique triangle, more than	*Angle measures* • Solve problems of angle measure using informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. *Pythagorean Theorem* • Explain a proof about the Pythagorean Theorem

Additional content found in the Common Core State Standards related to Geometry		
CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**
• Represent 3-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures when solving real-world and mathematical problems. *Drawing in the coordinate plane* • Represent polygons using a rectangular coordinate plane given coordinates for the vertices. • Use coordinates to fine the length of a side joining points with the same first coordinate or same second coordinate.	one triangle, or no triangle). • Describe the 2-dimensional figures that result from slicing 3-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. *Angle measures* • Solve problems of angle measure using facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem.	and its converse. • Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

3. MEASUREMENT: Students use a variety of tools and techniques of measurement in a problem-solving situation.

Wyoming benchmarks	
MA8.3.1	Students apply estimation and measurement of weight/mass to content problems and convert within U.S. customary and within metric units (mg, g, kg).
MA8.3.2	Students apply estimation and measurement of capacity/volume to content problems and convert within metric units (ml, l).
MA8.3.3	Students select and use the appropriate methods, tools, and units to solve problems involving angle measure, perimeter, circumference, area (including circles), and volume of rectangular solids.

Additional content found in the Common Core State Standards related to Measurement		
CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**
Area and surface area • Determine the area of right triangles and other triangles, using appropriate methods (e.g., composition and decomposition of shapes). *Capacity/volume and mass* • Apply estimation and measurement of capacity/volume to content problems using the appropriate methods (e.g., unit cubes, formulas) to solve real-world and mathematical problems involving volume of a right rectangular prism with fractional edge lengths.	*Area, surface area, and volume* • Select and use the appropriate methods, tools, and units to solve real-world and mathematical problems involving volume and surface area of 2- and 3-dimensional objects composed of triangles, quadrilaterals, and polygons *Circles* • Select and use the appropriate methods (e.g., formulas), tools, and units to solve problems involving the area and circumference of a circle. • Give an informal derivation of the relationship between the circumference and area of a circle.	*Area, surface area, and volume* • Select and use the appropriate methods, tools, and units to solve real-world and mathematical problems involving the volume of cones, cylinders, and spheres, as well as rectangular solids.

4. ALGEBRA: Students use algebraic methods to investigate, model, and interpret patterns and functions involving numbers, shapes, data, and graphs in a problem-solving situation.

Wyoming benchmarks	
MA8.4.1	Students translate word phrases, which involve the four basic operations to mathematical expressions.
MA8.4.2	Students solve one- and two- step linear equations each with an integer coefficient and integer solutions.
MA8.4.3	Students evaluate algebraic expressions and formulas given integer values for variables.
MA8.4.4	Using simple linear equations, students create a table, and graph the solutions on the coordinate system.

Additional content found in the Common Core State Standards related to Algebra

CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**

Expressions and Equations
• Write, model, and evaluate equations representing quantitative relationships between independent and dependent variables.
• Write, model, and evaluate expressions involving whole number exponents and/or letter variables.
  o Identify what an expression is, how variables are used in expressions, and parts of an expression using mathematical terms (e.g. sum, product, term, quotient)
  o Understands and generates equivalent expressions
  o Understands the components of an equation as it relates to expressions.
• Constructs and solves word problems that require the representation of these problems as expressions or equations.
	Expressions and Equations
	• Use properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
	• Generates equivalent algebraic expressions to understand different representations
	• Use algebraic concepts, symbols, and skills to solve multi-step real-life and mathematical problems, including problems which
	  o Involve numbers (positive and negative rational numbers)
	  o Involve algebraic expressions and equations, including linear equations and inequalities.
		Functions
		• Define, evaluate, and compare functions
		  o Compare functions represented in different forms (tables, equations, or verbal)
		  o Describes characteristics of functions from a graph (where it is increasing or decreasing etc)
		• Constructs a function that models a linear relationship from a graph or table of values
		• Sketches a graph whose characteristics are described verbally

5. DATA ANALYSIS AND PROBABILITY: Students use data analysis and probability to analyze given situations and the results of experiments.

Wyoming benchmarks	
MA8.5.1	Students systematically collect, organize, describe, analyze, and represent data using tables, charts, diagrams, and graphs.
MA8.5.2	Students calculate mean, median, mode, and range for data sets and use in a real-world setting appropriate to grade level.
MA8.5.3	Students predict, compare, and calculate probable outcomes of experiments or simulations.
MA8.5.4	Students communicate about the likelihood of events using concepts from probability such as impossible, equally likely and certain appropriate to grade level.

Additional content found in the Common Core State Standards related to Data Analysis and Probability

CCSS grade 6 not found in WY grade 6	**CCSS grade 7 not found in WY grade 7**	**CCSS grade 8 not found in WY grade 8**
Represent and interpret data • Collect, organize and describe a data set of measurements in fractions of a unit (1/2,1/4, 1/8) using line graphs, and use operations on fractions to solve problems involving information presented in line graphs.	*Statistical variability* • Develops an understanding of statistical variability. o Recognizes a statistical question as one that anticipates variability o Understands that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape. o Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number. *Distributions* • Organize and describe data using histograms, box plots, and dot plots.	*Bivariate data* • Collect, organize, describe, analyze and represent (e.g., in a scatter plot) bivariate measurement data to investigate patterns of association between two quantities. • Draw reasonable inferences from best fit lines on a scatter plot to informally assess the model fit. • Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept • Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects, and use relative frequencies calculated for rows or columns to describe possible associations between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?